

Notice of Allowability

Application No.

09/823,162

Applicant(s)

COLOMBO, MAURO

Examiner

Erica E Cadugan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed June 4, 2004 and interview of August 11, 2004.
2. ☒ The allowed claim(s) is/are 29-37.
3. ☒ The drawings filed on 30 March 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

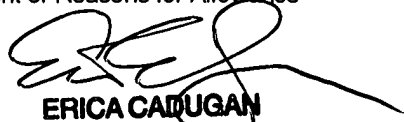
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


ERICA CADUGAN
PRIMARY EXAMINER

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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Yan Glickberg on August 11, 2004.

The application has been amended as follows:

In claim 29, line 14, "detachable connection" has been changed to--detachably connecting--.

Claim 33 has been amended as follows:

33 (Amended). An operating head for an automatic machine tool having a structure movable along a set of three Cartesian axes, the operating head comprising:

a first support rotatably fitted to the structure for rotation about a first axis;

a chuck unit fitted to the first support, the chuck unit projecting from the first support and being rotatable to different angular positions around a second axis, the chuck unit being removable from the first support and having a chuck for holding a tool;

the first support includes a power transmission system and means for [detachably] connecting the power transmission system to the chuck unit; and

a rotating support fitted to the first support, the chuck unit being [detachably] mounted on the rotating support by means for detachably coupling, the rotating support including means for

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detachably coupling the power transmission system to the chuck unit. and the rotating support controllable by means for controlling rotation of the rotating support around the second axis.

2. The following is an examiner's statement of reasons for allowance: There are three pending independent claims in the present case: 29, 31, and 33. The reasons for allowance for independent claim 31 can be found in the office action mailed May 29, 2003.

Regarding independent claim 29, it is noted that independent claim 29 sets forth that the second support has a "coupling means for detachably connecting to the chuck unit" and also sets forth that the chuck unit is "connectable to said power transmission system via a detachable coupling comprising parts brought into contact with each other and clamped with a straight approach movement". Regarding independent claim 33, it is noted that independent claim 33 sets forth "the chuck unit being mounted on the rotating support by means for detachably coupling", and also sets forth "the rotating support including means for detachably coupling the power transmission system to the chuck unit".

Note that U.S. Pat. No.'s 5,385,436 to Corsi ('436) and U.S. Pat. No.'s 5,286,146 to Corsi ('146), as described in detail in the preceding office action, are representative of the closest prior art of record to the present invention as set forth in independent claims 29 and 33.

As asserted by Applicant on page 8 of the response filed June 4, 2004:

[A]pplicant's disclosure states on page 5, lines 9-13 that:

chuck unit 5 can easily be removed, as it is only connected to the transmission devices via a coupling which requires the two parts to be brought into contact with one another and clamped with a simple, straight approach movement; it can therefore be detached with no need to remove any part of the head, merely by activating grippers 15 to release shanks or pins 14 and disconnect the electric and hydraulic couplings.

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Note that neither '436 nor '146 teach that the second support has a "coupling means for detachably connecting to the chuck unit" as set forth in claim 29. Additionally/similarly, neither '436 nor '146 teach "the chuck unit being mounted on the rotating support by means for detachably coupling" as set forth in claim 33. Specifically note that neither '436 nor '146 teach that the "chuck unit" is attached to the second or rotating support via the grippers 15 and pins 14 described in Applicant's specification, nor any equivalent thereto that would enable the chuck unit to be detached from the second or rotating support "with no need to remove any part of the head" as taught by Applicant's specification and pointed out by Applicant in the response of June 2004.

Additionally, neither '436 nor '146 teach that the chuck unit is "connectable to said power transmission system via a detachable coupling comprising parts brought into contact with each other and clamped with a straight approach movement" as set forth in independent claim 29. Additionally note that neither '436 nor '146 teach "the rotating support including means for detachably coupling the power transmission system to the chuck unit" as set forth in independent claim 33. Specifically note that neither '436 nor '146 explicitly teach the "means for detachably coupling the power transmission system to the chuck unit" 25-26 (re claim 33) taught by Applicant's specification, nor any equivalent thereto (re claim 33) wherein the chuck unit can easily be removed as it is only connected to the transmission devices via a coupling which requires the two parts to be brought into contact with one another and clamped with a simple, straight approach movement as taught by Applicant's specification and pointed out by Applicant in the response of June 2004.

Additionally, it is noted that U.S. Pat. No. 5,322,494 to Holtey (discussed in detail in the preceding office action mailed December 31, 2003) does teach a machining device having detachable and interchangeable spindle or “chuck” units 23 that are interchangeably mounted to a motorized driver 25 (which includes high speed motor 19 and a support and coupling section 21, see col. 6, lines 49-54 and Figures 6 and 1-3) of a universal transfer apparatus 113 that is operable to move the motorized driver along three Cartesian axes (col. 11, lines 10-15 and Figure 6). Note that the coupling section 21 includes clamp assembly 63 wherein three clamps 63a are provided that exert a retaining force on an annular flange 29d of the stationary housing 29 of the spindle or “chuck” unit 23 (Figure 2, col. 9, lines 20-34). The clamps 63a are supported by actuators 65 for rotary movement from a position overlying the flange 29a to a displaced position allowing removal of the spindle unit 23. The actuators 65 are also moveable axially to permit disengagement of the clamping force exerted on the flange 29a (see col. 9, lines 20-34 and Figure 2). Additionally, the drive shaft 59 of the motorized driver is “coupled” to the spindle or “chuck” unit 23 via a “straight approach movement”.

However, regarding ‘436, note that hub or “second” or “rotating” support 6 rotates about axis A via the bearings 7 (Figure 1, col. 3, lines 58-66). Similarly, regarding ‘146, note that the “second” or “rotating” support 3 rotates about axis A (see Figure 3 and col. 2, lines 19-27). If the clamp assembly 63 including the clamps that pull in on the flange 29d of the spindle unit or “chuck unit” 23 as taught by ‘494 (Holtey) and the coupling of the drive shaft 59 of the motorized driver 19 to the “chuck” unit 23 that is coupled via a “straight approach movement” as taught by ‘494 (Holtey) was provided to either of the devices taught by ‘146 or ‘436, both of the devices taught by ‘146 and ‘436 would be precluded from functioning as intended. Specifically note that

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in '146, the clamps 63a taught by '494 would have to be provided on the fork 2 taught by '146 in order to fix the "chuck unit" 3 taught by '146 (or a substitute chuck unit 23 as taught by '494) in the same manner that the clamps 63a fix the "chuck unit" 23. Additionally, the connection to the driver (i.e., at shaft 59 as taught by '494) would have to occur from the rear (i.e., from the right as viewed in Figure 3 of '146) of the chuck unit taught by '146 in order to function in the same manner as that taught by '494. However, such fixation, both with the clamps 63a and from the right/rear of the chuck unit 3 as viewed in Figure 3 of '146 would prevent the chuck unit from rotating about axis A, thus precluding '146's device from functioning as intended.

A similar situation exists with '436, noting that hub 6 also needs to rotate about axis A in order to function as intended.

3. The aforescribed prior art of record being representative of the closest prior art of record, for at least the foregoing reasoning, the prior art of record neither anticipates nor renders obvious the present invention as set forth in independent claims 29 and 33. Additionally, for at least the reasoning set forth in the reasons for allowance in the office action mailed May 29, 2003, the prior art of record neither anticipates nor renders obvious the present invention as set forth in independent claim 31.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Drawings

4. It is noted that Applicant indicated on page 7 of the response filed in June 2004 that the drawing attached to the amendment filed on November 25, 2003 was not intended as any sort of drawing amendment/change. Thus, it is noted that the arguments set forth on page 7 of the response regarding whether or not the subject matter shown by the drawing attached to the amendment of November 25, 2003 was supported by the specification do not appear to be relevant, i.e., since the drawing was not intended as any sort of drawing amendment or change, the issue is moot.

Conclusion

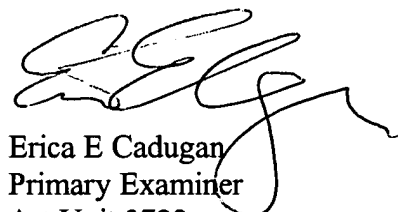
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E Cadugan whose telephone number is (703) 308-6395. The examiner can normally be reached on M-F, 7:30 a.m. to 5:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (703) 308-2159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Erica E Cadugan
Primary Examiner
Art Unit 3722

eec

August 11, 2004